2. REMARKS / DISCUSSION OF ISSUES

Claims 1-18 are pending in the application. Claims 8-18 are new. Any amendments to the claims are provided to overcome potential issues of indefiniteness noted in the Office Action; to delete European-style phraseology; and to add phraseology more common in US practice. No new matter is added.

Rejections under 35 U.S.C. § 112, ¶ 2

The rejections of claims 4 and 5 under this section of the Code are believed to be moot in view of the amendments thereto.

Rejections under 35 U.S.C. § 102

Claims 1-7 are rejected under 35 U.S.C. § 102(b) as being unpatentable over *Ise, et al.* (US Patent Publication 20020028329). For at least the reasons set forth herein, this rejection is improper and should be withdrawn.

At the outset Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen,* 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.,* 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.,* 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

i. Claim 1

Claim 1 is drawn to an organic electroluminescent component and features:

"*...c) a mixing layer having*

c.1) a matrix of a conductive organic material with one or more singlet states and one or more triplet states, selected from the group: p-conductive and n-conductive materials,..."

As is known, a triplet state is a quantum mechanical phenomenon that relates to spin states of particles, such as electrons, and selection rules of transitions. Through solutions to the Hamiltonian, these eigenfunctions are determined. In particular, the triplet refers to the three possible symmetric spin eigenfunctions. The anti-symmetric spin eigenfunction is a singlet. Thus, claim 1 recites that the organic material has one or more singlet states and one or more triplet states. The applied art fails to disclose at least this feature.

The Office Action directs Applicants to paragraph [0010] of the *Ise, et al.* for the alleged disclosure of the singlet and triplet states as claimed. However, a review of this portion does not reveal a material with one or more singlet states and reveals only the emission of triplet excitons. As is known an exciton is produced by recombination of an electron and a hole injected in the light emitting layer. However, the transition must obey quantum mechanical selection rules. The reference does disclose exciton emissions in a triplet state. The reference does not disclose that the matrix of organic material has one or more singlet states as specifically claimed. Therefore, the rejection of claim 1 is improper for failing to disclose at least one feature of the claim.

ii. Reference Teaches Away

Furthermore, Applicants respectfully submit that *Ise, et al.* does not qualify as a reference because it teaches away from that which is claimed. "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant . . [or] if it suggests that the line of development flowing from the reference's disclosure is unlikely to

be productive of the result sought by the applicant." *In re Gurley* 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

As noted above, the claim 1, features *a matrix of a conductive organic material with one or more singlet states and one or more triplet states*. Thus, both states are embraced. By contrast, in paragraph [0031], *Ise, et al.* discloses:

> Generally, the luminance efficiency of a light emitting element can be expressed by a product of an injection efficiency of a hole and an electron, a recombination efficiency of a hole and an electron, a generation efficiency of an exciton, an efficiency of transfer of excitation energy generated by the recombination to the light emitting material, and a luminous quantum efficiency of the light emitting material. ***When a material which emits light from a triplet exciton, is used as the light emitting material, the probability at which the exciton is generated by the recombination, is higher than that of a singlet exciton, thereby resulting in improvement of the luminance efficiency.*** Here, so long as the energy of a triplet exciton generated by the recombination can be efficiently transferred to the T_1 level of the light emitting material, the luminance efficiency further improves. (Emphasis provided.)

Thus, one skilled in the art having had the benefit of *Ise, et al.* would be lead toward the use of a material that emitted a triplet exciton due to recombination in order to improve luminance efficiency, and away from use of a material that emitted a singlet exciton. For at least these reasons, Applicants respectfully submit that *Ise, et al.* teaches away from that which is claimed and therefore does not qualify as a reference. As such, the rejection is improper and should be withdrawn.

For at least the reasons set forth above, the rejection of claim 1 is improper and should be withdrawn. As such claim 1 is patentable over the applied art. Moreover, claims 2-8, which depend from claim 1 directly or indirectly, are also patentable for at least the same reasons, and in view of their additional subject matter.

New Claims

Claim 9 is drawn to an organic electroluminescent component and features:

a mixing layer, comprising: a matrix of a conductive organic material with one or more singlet states and one or more triplet states, selected from the group: p-conductive and n-conductive materials.

Thus, like claim 1, claim 9 features a conductive layer with one or more singlet states and one or more triplet states. For reasons substantially identical those supporting the patentability of claim 1, claim 9 is also patentable. Moreover, claims 10-18, which depend from claim 9 directly or indirectly, are also patentable for at least the same reasons, and in view of their additional subject matter.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
Phillips Electronics North America Corp.

s/William S. Francos/

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